# **EAST Search History**

| Ref<br># | Hits | Search Query            | DBs   | Default<br>Operator | Plurals | Time Stamp       |
|----------|------|-------------------------|---|---------------------|---------|------------------|
| L1       | 918  | (546/112,514/299).CCLS. | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR                  | OFF     | 2007/08/29 08:06 |
| L2       | 83   | I1 and imidazol         | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR                  | OFF     | 2007/08/29 08:07 |
| L3       | 0    | I2 and acetylcholin     | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | OR                  | OFF     | 2007/08/29 08:07 |

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LOGINID: SSPTANXR1625

PASSWORD:

specific topic.

TERMINAL (ENTER 1, 2, 3, OR ?):2

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                  Web Page for STN Seminar Schedule - N. America
      1
NEWS
         MAY 01
                  New CAS web site launched
NEWS
         MAY 08
                  CA/CAplus Indian patent publication number format defined
      3
NEWS
         MAY 14
                  RDISCLOSURE on STN Easy enhanced with new search and display
                  fields
NEWS
         MAY 21
      5
                  BIOSIS reloaded and enhanced with archival data
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         MAY 21
                  TOXCENTER enhanced with BIOSIS reload
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         MAY 21
                  CA/CAplus enhanced with additional kind codes for German
                  patents
         MAY 22
NEWS
      8
                  CA/CAplus enhanced with IPC reclassification in Japanese
                  patents
NEWS
      9
         JUN 27
                  CA/CAplus enhanced with pre-1967 CAS Registry Numbers
NEWS 10
         JUN 29
                  STN Viewer now available
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         JUN 29
                  STN Express, Version 8.2, now available
NEWS 12
         JUL 02
                  LEMBASE coverage updated
NEWS 13
         JUL 02
                  LMEDLINE coverage updated
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         JUL 02
                  SCISEARCH enhanced with complete author names
NEWS 15
         JUL 02
                  CHEMCATS accession numbers revised
NEWS 16
         JUL 02
                  CA/CAplus enhanced with utility model patents from China
NEWS 17
         JUL 16
                  CAplus enhanced with French and German abstracts
NEWS 18
         JUL 18
                  CA/CAplus patent coverage enhanced
NEWS 19
         JUL 26
                  USPATFULL/USPAT2 enhanced with IPC reclassification
NEWS 20
         JUL 30
                  USGENE now available on STN
NEWS 21
         AUG 06
                  CAS REGISTRY enhanced with new experimental property tags
NEWS 22
         AUG 06
                  BEILSTEIN updated with new compounds
NEWS 23
         AUG 06
                  FSTA enhanced with new thesaurus edition
NEWS 24
         AUG 13
                  CA/CAplus enhanced with additional kind codes for granted
                  patents
                  CA/CAplus enhanced with CAS indexing in pre-1907 records
NEWS 25
         AUG 20
NEWS 26
         AUG 27
                  Full-text patent databases enhanced with predefined
                  patent family display formats from INPADOCDB
NEWS 27
         AUG 27
                  USPATOLD now available on STN
         AUG 28
                  CAS REGISTRY enhanced with additional experimental
NEWS 28
                  spectral property data
NEWS EXPRESS
               29 JUNE 2007: CURRENT WINDOWS VERSION IS V8.2,
               CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),
               AND CURRENT DISCOVER FILE IS DATED 05 JULY 2007.
NEWS HOURS
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               Welcome Banner and News Items
 NEWS IPC8
               For general information regarding STN implementation of IPC 8
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```

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FILE 'HOME' ENTERED AT 07:57:00 ON 29 AUG 2007

=> file reg
COST IN U.S. DOLLARS

SINCE FILE TOTAL ENTRY SESSION 0.42 0.42

FULL ESTIMATED COST

FILE 'REGISTRY' ENTERED AT 07:57:56 ON 29 AUG 2007 USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT. PLEASE SEE "HELP USAGETERMS" FOR DETAILS. COPYRIGHT (C) 2007 American Chemical Society (ACS)

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 28 AUG 2007 HIGHEST RN 945714-55-6 DICTIONARY FILE UPDATES: 28 AUG 2007 HIGHEST RN 945714-55-6

New CAS Information Use Policies, enter HELP USAGETERMS for details.

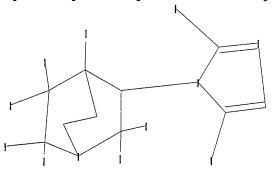
TSCA INFORMATION NOW CURRENT THROUGH June 29, 2007

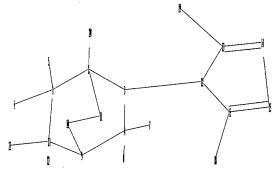
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REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

http://www.cas.org/support/stngen/stndoc/properties.html

=> Uploading C:\Program Files\Stnexp\Queries\10579609.str





chain nodes :

5 6 7 8 18 19 20 22 23

ring nodes :

1 2 3 4 9 10 11 12 13 14 15 16 21

chain bonds :

1-6 1-5 2-20 3-12 4-8 4-7 13-19 16-18 21-22 21-23

ring bonds :

1-2 1-21 2-3 2-11 3-4 4-9 9-21 9-10 10-11 12-13 12-16 13-14 14-15

13-16

exact/norm bonds :

1-2 1-21 2-3 2-11 3-4 3-12 4-9 9-21 9-10 10-11 12-13 12-16 13-14 14-15

exact bonds :

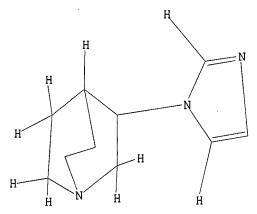
1-6 1-5 2-20 4-8 4-7 13-19 15-16 16-18 21-22 21-23 isolated ring systems : containing 12 :

## Match level:

1:Atom 2:Atom 3:Atom 4:Atom 5:CLASS 6:CLASS 7:CLASS 8:CLASS 9:Atom 10:Atom 11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 18:CLASS 19:CLASS 20:CLASS 21:Atom 22:CLASS 23:CLASS

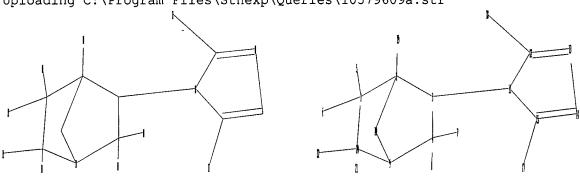
### L1 STRUCTURE UPLOADED

=> d l1 L1 HAS NO ANSWERS L1 STR



Structure attributes must be viewed using STN Express query preparation.

Uploading C:\Program Files\Stnexp\Queries\10579609a.str



chain nodes : 5 6 7 8 17 18 19 21 22 ring nodes : 1 2 3 4 9 10 11 13 14 15 12 20 chain bonds : 4-7 12-18 15-17 20-21 20-22 1-6 1-5 2-19 4-8 3-11 ring bonds : 4-9 9-20 9-10 11-12 11-15 12-13 13-14 14-15 1-2 1-20 2-3 2-10 3-4 exact/norm bonds : 1-2 1-20 2-3 2-10 3-11 3-4 4-9 9-20 9-10 11-12 11-15 12-13 13-14 exact bonds : 1-6 1-5 2-19 4-8 4-7 12-18 14-15 15-17 20-21 20-22

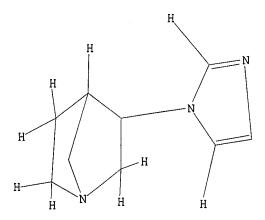
isolated ring systems :
containing 11 :

## Match level:

1:Atom 2:Atom 3:Atom 4:Atom 5:CLASS 6:CLASS 7:CLASS 8:CLASS 9:Atom 10:Atom 11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 17:CLASS 18:CLASS 19:CLASS 20:Atom 21:CLASS 22:CLASS

### L2 STRUCTURE UPLOADED

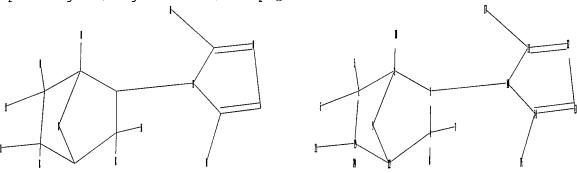
=> d 12 L2 HAS NO ANSWERS L2 STR



Structure attributes must be viewed using STN Express query preparation.

=>

Uploading C:\Program Files\Stnexp\Queries\10579609b.str



chain nodes : 5 6 7 8 16 17 18 20 ring nodes : 1 2 3 4 9 10 11 12 13 chain bonds : 14-16 19-21 19-20 1-6 1-5 2-18 3-10 4 - 711-17 ring bonds : 1-2 1-19 2-3 2-9 3 - 44-22 9-22 10-11 10-14 11-12 12-13 13-14 19-22 exact/norm bonds : 1-2 1-19 2-3 2-9 3-4 3-10 4-22 9-22 10-11 10-14 11-12 12-13 19-22 exact bonds : 1-6 1-5 2-18 4-8 4-7 11-17 13-14 14-16 19-21 19-20

isolated ring systems :
containing 10 :

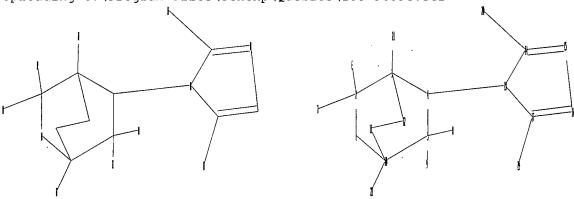
## Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:CLASS 6:CLASS 7:CLASS 8:CLASS 9:Atom 10:Atom 11:Atom 12:Atom 13:Atom 14:Atom 16:CLASS 17:CLASS 18:CLASS 19:Atom 20:CLASS 21:CLASS 22:Atom

### L3 STRUCTURE UPLOADED

=>

Uploading C:\Program Files\Stnexp\Queries\10579609c.str



chain nodes : 6 7 8 9 19 20 21 22 ring nodes : 1 2 3 4 5 10 11 12 13 14 15 16 17 chain bonds : 2-6 2-7 3-21 4-13 5-9 5-8 10-22 14-20 17-19 ring bonds : 1-10 1-2 2-3 3-4 3-12 4-5 5-10 10-11 11-12 13-14 13-17 14-15 15-16 16-17 exact/norm bonds : 1-10 1-2 2-3 3-4 3-12 4-5 4-13 5-10 10-11 11-12 13-14 13-17 14-15 15-16 exact bonds : 2-6 2-7 3-21 5-9 5-8 10-22 14-20 16-17 17-19 isolated ring systems : containing 1 : 13 :

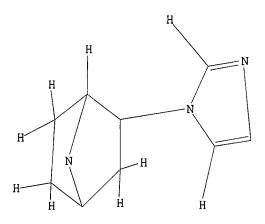
## Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:CLASS 7:CLASS 8:CLASS 9:CLASS 10:Atom 11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 19:CLASS 20:CLASS 21:CLASS 22:CLASS

### L4 STRUCTURE UPLOADED

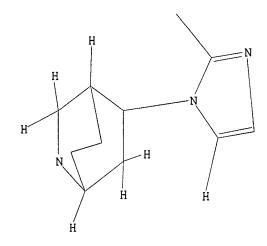
=> d 12 L2 HAS NO ANSWERS L2 STR

Structure attributes must be viewed using STN Express query preparation.



Structure attributes must be viewed using STN Express query preparation.

=> d 14 L4 HAS NO ANSWERS L4 STR



Structure attributes must be viewed using STN Express query preparation.

=> s 11 full

FULL SEARCH INITIATED 08:00:10 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED - 324 TO ITERATE

100.0% PROCESSED 324 ITERATIONS 13 ANSWERS

SEARCH TIME: 00.00.01

L5 13 SEA SSS FUL L1

=> s 12 full

FULL SEARCH INITIATED 08:00:15 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED - 162 TO ITERATE

100.0% PROCESSED 162 ITERATIONS 0 ANSWERS

SEARCH TIME: 00.00.01

L6 0 SEA SSS FUL L2

=> s 13 full

FULL SEARCH INITIATED 08:00:19 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED - 2812 TO ITERATE

100.0% PROCESSED 2812 ITERATIONS 0 ANSWERS

SEARCH TIME: 00.00.01

L7 0 SEA SSS FUL L3

=> s 14 full

FULL SEARCH INITIATED 08:00:24 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED - 51722 TO ITERATE

100.0% PROCESSED 51722 ITERATIONS 0 ANSWERS

SEARCH TIME: 00.00.01

L8 0 SEA SSS FUL L4

=> file caplus

COST IN U.S. DOLLARS
SINCE FILE TOTAL
ENTRY SESSION
FULL ESTIMATED COST
688.40
688.82

FILE 'CAPLUS' ENTERED AT 08:00:29 ON 29 AUG 2007

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=> s 15 full

L9 2 L5

=> d ibib abs hitstr tot

L9 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2005:472155 CAPLUS

DOCUMENT NUMBER: 143:7863

TITLE: Preparation of 1-(azabicyclyl)-4-substituted-

imidazoles for use in pharmaceutical compositions as

 $\alpha 4$  and  $\alpha 7$  nicotinic acetylcholine receptor

(nAChR) agonists

INVENTOR(S): Empfield, James; Phillips, Eifion; Throner, Scott

PATENT ASSIGNEE(S): Astrazeneca AB, Swed. SOURCE: PCT Int. Appl., 30 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.    |      |      | KIN | IND DATE |     | APPLICATION NO. |      |      |                  |       |      | DATE  |     |     |          |          |     |  |
|---------------|------|------|-----|----------|-----|-----------------|------|------|------------------|-------|------|-------|-----|-----|----------|----------|-----|--|
| WO            | 2005 | 0496 | 12  |          | A1  | 20050602        |      |      | WO 2004-SE1660   |       |      |       |     |     | 20041115 |          |     |  |
|               | W:   |      |     |          |     |                 | ΑU,  |      |                  |       |      |       |     |     |          |          |     |  |
|               |      | CN,  | co, | CR,      | CU, | CZ,             | DE,  | DK,  | DM,              | DZ,   | EC,  | EE,   | EG, | ES, | FI,      | GB,      | GD, |  |
|               |      | GE,  | GH, | GM,      | HR, | HU,             | ID,  | IL,  | IN,              | IS,   | JP,  | ΚE,   | KG, | KP, | KR,      | ΚZ,      | LC, |  |
|               |      | LK,  | LR, | LS,      | LT, | LU,             | LV,  | MA,  | MD,              | MG,   | MK,  | MN,   | MW, | MX, | ΜZ,      | NA,      | NI, |  |
|               |      | NO,  | ΝZ, | OM,      | PG, | PH,             | PL,  | PT,  | RO,              | RU,   | SC,  | SD,   | SE, | SG, | SK,      | SL,      | SY, |  |
|               |      | ТJ,  | TM, | TN,      | TR, | TT,             | ΤZ,  | UA,  | UG,              | US,   | UZ,  | VC,   | VN, | YU, | ZA,      | ZM,      | ZW  |  |
|               | RW:  | BW,  | GH, | GM,      | ΚE, | LS,             | MW,  | ΜZ,  | NA,              | SD,   | SL,  | SZ,   | TZ, | UG, | ZM,      | ZW,      | AM, |  |
|               |      | AZ,  | BY, | KG,      | ΚZ, | MD,             | RU,  | ТJ,  | TM,              | AT,   | BE,  | BG,   | CH, | CY, | CZ,      | DE,      | DK, |  |
|               |      | EE,  | ES, | FI,      | FR, | GB,             | GR,  | HU,  | ΙE,              | IS,   | IT,  | LU,   | MC, | NL, | PL,      | PT,      | RO, |  |
|               |      | SE,  | SI, | SK,      | TR, | BF,             | ВJ,  | CF,  | CG,              | CI,   | CM,  | GΑ,   | GN, | GQ, | GW,      | ML,      | MR, |  |
|               |      | NE,  | SN, | TD,      | TG  |                 |      |      |                  |       |      |       |     |     |          |          |     |  |
| ΑU            | 2004 | 2914 | 57  |          | A1  | 20050602        |      |      | AU 2004-291457   |       |      |       |     |     |          | 20041115 |     |  |
| CA            | 2546 | 096  |     |          | A1  |                 | 2005 | 0602 | CA 2004-2546096  |       |      |       |     |     |          |          |     |  |
| EΡ            | 1687 | 303  |     |          | A1  |                 | 2006 | 0809 |                  | EP 20 | 004- | 8003: | 23  |     | 20       | 0041     | 115 |  |
|               | R:   | AT,  | BE, | CH,      | DE, | DK,             | ES,  | FR,  | GB,              | GR,   | ΙT,  | LI,   | LU, | ΝL, | SE,      | MC,      | PT, |  |
|               |      | •    | •   | •        | •   |                 | RO,  | •    |                  | BG,   |      |       | •   |     |          | •        |     |  |
|               | 1882 |      |     |          |     |                 |      |      | CN 2004-80034245 |       |      |       |     |     | 20041115 |          |     |  |
| BR 2004016629 |      |      |     | Α        |     | 2007            | 0116 |      | BR 20            | 004-  | 1662 | 9     |     | 20  | 0041     | 115      |     |  |

| JP 2007511603          | T     | 20070510       |     | 2006-541086   |   | 20041115 |
|------------------------|-------|----------------|-----|---------------|---|----------|
| IN 2006DN02411         | Α     | 20070420       | IN  | 2006-DN2411   |   | 20060501 |
| MX 2006PA05416         | Α     | 20060719       | MX  | 2006-PA5416   |   | 20060512 |
| US 2007105896          | A1    | 20070510       | US  | 2006-579609   |   | 20060517 |
| NO 2006002862          | Α     | 20060821       | NO  | 2006-2862     |   | 20060619 |
| PRIORITY APPLN. INFO.: |       |                | SE  | 2003-3075     | Α | 20031119 |
|                        |       |                | WO  | 2004-SE1660   | W | 20041115 |
| OTHER SOURCE(S):       | CASRE | EACT 143:7863; | MAI | RPAT 143:7863 |   |          |

R1

GI

I

II

AB Azabicyclyl-midazole derivs., such as I [A = azabycyclyl, such as 3-quinuclidinyl, or 1-azabicyclo[2.2.1]heptan-3-yl; R1 = aryl, heteroaryl], were prepared for therapeutic use as  $\alpha 4$  and  $\alpha 7$ nAChR agonists. These imidazoles are claimed for use in the treatment of ulcerative colitis, as well as for use in the treatment or prophylaxis of neurol. disorders, psychotic disorders or intellectual impairment disorders, such as Alzheimer's disease, learning deficit, cognition deficit, attention deficit, memory loss, attention deficit hyperactivity disorder, Parkinson's disease, Huntington's disease, Tourette's syndrome, neurodegenerative disorders in which there is loss of cholinergic synapses, jetlag, nicotine addiction, craving, pain, anxiety, schizophrenia, mania or manic depression. Thus, (R)-3-(4-phenylimidazol-1yl)-1-azabicyclo[2.2.2]octane (II) was prepared with 41% yield by cyclization of phenylglyoxal hydrate with (R)-(+)-3-aminoquinuclidine dihydrochloride, ammonium acetate and formaldehyde in AcOH. The prepared imidazoles were assayed for binding affinity to the  $\alpha 4$  and  $\alpha 7$ nAChR subtypes using rat hippocampi.

IT 852619-30-8P

RL: PAC (Pharmacological activity); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses) (preparation of 1-(azabicyclyl)-4-substituted-imidazoles for use in

(preparation of 1-(azabicyclyl)-4-substituted-imidazoles for use in pharmaceutical compns. as  $\alpha 4$  and  $\alpha 7$  nicotinic acetylcholine receptor (nAChR) agonists)

RN 852619-30-8 CAPLUS

CN 1-Azabicyclo[2.2.2]octane, 3-[4-(5-bromo-2-thienyl)-1H-imidazol-1-yl]-, (3R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

IT 852619-19-3P 852633-60-4P, (R)-3-(4-Phenylimidazol-1-yl)1-azabicyclo[2.2.2]octane 852633-62-6P 852633-65-9P
852633-67-1P 852633-68-2P 852633-70-6P
852633-72-8P 852633-74-0P 852633-76-2P
852633-78-4P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation of 1-(azabicyclyl)-4-substituted-imidazoles for use in pharmaceutical compns. as  $\alpha 4$  and  $\alpha 7$  nicotinic acetylcholine receptor (nAChR) agonists) 852619-19-3 CAPLUS

RN

1-Azabicyclo[2.2.2]octane, 3-(1H-imidazol-1-yl)- (9CI) (CA INDEX NAME) CN

852633-60-4 CAPLUS RN

1-Azabicyclo[2.2.2]octane, 3-(4-phenyl-1H-imidazol-1-yl)-, (3R)- (9CI) CN (CA INDEX NAME)

Absolute stereochemistry.

RN 852633-62-6 CAPLUS

1-Azabicyclo[2.2.2]octane, 3-[4-[4-(4-morpholinyl)phenyl]-1H-imidazol-1-CN yl]-, (3R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN852633-65-9 CAPLUS

1-Azabicyclo[2.2.2]octane, 3-[4-(5-phenyl-2-thienyl)-1H-imidazol-1-yl]-, CN dihydrochloride, (3R) - (9CI) (CA INDEX NAME)

Absolute stereochemistry.

## ●2 HC1

RN 852633-67-1 CAPLUS CN 1-Azabicyclo[2.2.2]octane, 3-[4-(2-thienyl)-1H-imidazol-1-yl]-, (3R)-(9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 852633-68-2 CAPLUS

CN 1-Azabicyclo[2.2.2]octane, 3-[4-(2-thienyl)-1H-imidazol-1-yl]-, (3R)-, bis(trifluoroacetate) (9CI) (CA INDEX NAME)

CM 1

CRN 852633-67-1 CMF C14 H17 N3 S

Absolute stereochemistry.

CM 2

CRN 76-05-1 CMF C2 H F3 O2

RN 852633-70-6 CAPLUS CN 1-Azabicyclo[2.2.2]octane, 3-(4-[2,2'-bithiophen]-5-yl-1H-imidazol-1-yl)-,

Absolute stereochemistry.

RN 852633-72-8 CAPLUS

CN 1-Azabicyclo[2.2.2]octane, 3-(4-[2,3'-bithiophen]-5-yl-1H-imidazol-1-yl)-, (3R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 852633-74-0 CAPLUS

CN 1-Azabicyclo[2.2.2]octane, 3-[4-[5-(3-furanyl)-2-thienyl]-1H-imidazol-1-yl]-, (3R)-(9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 852633-76-2 CAPLUS

CN 1-Azabicyclo[2.2.2]octane, 3-[4-[5-(4-pyridinyl)-2-thienyl]-1H-imidazol-1-yl]-, (3R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 852633-78-4 CAPLUS

CN 1-Azabicyclo[2.2.2]octane, 3-[4-[5-(3-pyridinyl)-2-thienyl]-1H-imidazol-1-yl]-, (3R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

1.9 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2007 ACS on STN

3

ACCESSION NUMBER: DOCUMENT NUMBER:

REFERENCE COUNT:

2005:472154 CAPLUS

143:7862

TITLE:

Preparation of 1-(azabicyclyl)-5-substituted-

imidazoles for use in pharmaceutical compositions as

 $\alpha 4$  and  $\alpha 7$  nicotinic acetylcholine receptor

(nAChR) agonists

INVENTOR(S):

Empfield, James; Phillips, Eifion; Throner, Scott

PATENT ASSIGNEE(S):

Astrazeneca AB, Swed.

SOURCE:

PCT Int. Appl., 27 pp. CODEN: PIXXD2

DOCUMENT TYPE:

Patent

LANGUAGE:

English

FAMILY ACC. NUM. COUNT:

PATENT INFORMATION:

| PA'     | PATENT NO.           |      |     |     |             |      | KIND DATE |      |     |                 |       |          | DATE     |     |          |      |     |  |
|---------|----------------------|------|-----|-----|-------------|------|-----------|------|-----|-----------------|-------|----------|----------|-----|----------|------|-----|--|
| WO      | WO 2005049611        |      |     |     | A1 20050602 |      |           |      |     | 2004-           |       | 20041115 |          |     |          |      |     |  |
|         |                      |      |     |     |             |      |           |      |     |                 | , BG, |          |          |     |          |      |     |  |
|         |                      | CN,  | CO, | CR, | CU,         | CZ,  | DE,       | DK,  | DM, | , DZ            | , EC, | EE,      | EG,      | ES, | FI,      | GB,  | GD, |  |
|         |                      | GE,  | GH, | GM, | HR,         | HU,  | ID,       | IL,  | IN, | IS              | , JP, | ΚE,      | KG,      | ΚP, | KR,      | ΚZ,  | LC, |  |
|         |                      | LK,  | LR, | LS, | LT,         | LU,  | LV,       | MA,  | MD, | MG              | , MK, | MN,      | MW,      | MX, | ΜZ,      | NA,  | NI, |  |
|         |                      | NO,  | NZ, | OM, | PG,         | PH,  | PL,       | PT,  | RO, | RU              | , SC, | SD,      | SE,      | SG, | SK,      | SL,  | SY, |  |
|         |                      | ТJ,  | TM, | TN, | TR,         | TT,  | TZ,       | UA,  | UG, | US              | , UZ, | VC,      | VN,      | YU, | ZA,      | ZM,  | zw  |  |
|         | RW:                  | BW,  | GH, | GM, | ΚE,         | LS,  | MW,       | ΜZ,  | NA, | SD              | , SL, | SZ,      | ΤZ,      | UG, | ZM,      | ZW,  | AM, |  |
|         |                      | ΑZ,  | BY, | KG, | ΚZ,         | MD,  | RU,       | ТJ,  | TM, | ΑT              | , BE, | BG,      | CH,      | CY, | CZ,      | DE,  | DK, |  |
|         |                      | EE,  | ES, | FI, | FR,         | GB,  | GR,       | HU,  | ΙĖ, | IS              | , IT, | LU,      | MC,      | NL, | PL,      | PT,  | RO, |  |
|         |                      | SE,  | SI, | SK, | TR,         | BF,  | ВJ,       | CF,  | CG, | CI              | , CM, | GA,      | GN,      | GQ, | GW,      | ML,  | MR, |  |
|         |                      |      |     | TD, |             |      |           |      |     |                 |       |          |          |     |          |      |     |  |
|         | AU 2004291456        |      |     |     |             |      |           |      |     |                 |       |          |          |     |          |      |     |  |
| CA      | 2546                 | 093  |     |     | A1          |      | 2005      | 0602 |     | CA .            | 2004- | 2546     | 093      |     | 2        | 0041 | 115 |  |
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|         | R:                   | ΑT,  | BE, | CH, | DE,         | DK,  | ES,       | FR,  | GB, | GR              | , IT, | LI,      | LU,      | NL, | SĖ,      | MC,  | PT, |  |
|         |                      | •    | •   | •   | •           | •    |           |      |     |                 | , CZ, |          |          |     |          |      |     |  |
|         | 1882                 |      |     |     | A 20061220  |      |           |      |     | CN .            | 2004- | 8003     | 20041115 |     |          |      |     |  |
| BR      | BR 2004016661        |      |     |     | A 20070116  |      |           |      |     | BR              | 2004- | 1666     | 20041115 |     |          |      |     |  |
| JP      | 2007                 | 5116 | 02  |     | ${f T}$     |      |           |      |     | JP 2006-541085  |       |          |          |     | 20041115 |      |     |  |
|         |                      |      |     |     |             |      |           |      |     | IN 2006-DN2419  |       |          |          |     |          |      |     |  |
|         | 2006                 |      | 415 |     | Α           |      | 2006      | 0719 |     | MX .            | 2006- | PA54     | 15       |     | 2        |      |     |  |
|         | 2006                 |      |     |     | Α           |      | 2006      | 0821 |     | NO .            | 2006- | 2868     |          |     | 2        | 0060 |     |  |
| PRIORIT | IORITY APPLN. INFO.: |      |     |     |             |      |           |      |     |                 | 2003- |          |          |     |          | 0031 |     |  |
|         |                      |      |     |     |             |      |           |      |     |                 | 2004- |          |          | I   | W 2      | 0041 | 115 |  |
| OTHER S | HER SOURCE(S):       |      |     |     |             | REAC | T 14      | 3:78 | 62; | MARPAT 143:7862 |       |          |          |     |          |      |     |  |

GI

Azabicyclyl-imidazole derivs., such as I [A = azabycyclyl, such as AR 3-quinuclidinyl, or 1-azabicyclo[2.2.1]heptan-3-yl; R1 = aryl, heteroaryl], were prepared for therapeutic use as  $\alpha 4$  and  $\alpha 7$ nAChR agonists. These imidazoles are claimed for use in the treatment of ulcerative colitis, as well as for use in the treatment or prophylaxis of neurol. disorders, psychotic disorders or intellectual impairment disorders, such as Alzheimer's disease, learning deficit, cognition deficit, attention deficit, memory loss, attention deficit hyperactivity disorder, Parkinson's disease, Huntington's disease, Tourette's syndrome, neurodegenerative disorders in which there is loss of cholinergic synapses, jetlag, nicotine addiction, craving, pain, anxiety, schizophrenia, mania or manic depression. Thus, (R)-3-[5-(5-bromothiophen-2-yl)imidazol-1-yl]-1-azabicyclo[2.2.2]octane (II) was prepared via dihydroxylation of 2-acetyl-5-bromothiophene using SeO2 in H2O and 1,4-dioxane to form the intermediate glyoxal hydrate, 1-(5-bromothiophen-2yl)-2,2-dihydroxyethanone, in 73% yield, and subsequent cyclization of the glyoxal hydrate with (R)-(+)-3-aminoquinuclidine dihydrochloride, ammonium acetate and formaldehyde in AcOH and H2O to give the desired II in 33% yield. The prepared imidazoles were assayed for binding affinity to the  $\alpha 4$  and  $\alpha 7$  nAChR subtypes using rat hippocampi.

IT 852619-30-8P

RL: BYP (Byproduct); PREP (Preparation) (preparation of 1-(azabicyclyl)-5-substituted-imidazoles for use in pharmaceutical compns. as  $\alpha 4$  and  $\alpha 7$  nicotinic acetylcholine receptor (nAChR) agonists)

RN 852619-30-8 CAPLUS

CN 1-Azabicyclo[2.2.2]octane, 3-[4-(5-bromo-2-thienyl)-1H-imidazol-1-yl]-, (3R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

IT 852619-19-3P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation of 1-(azabicyclyl)-5-substituted-imidazoles for use in pharmaceutical compns. as  $\alpha 4$  and  $\alpha 7$  nicotinic acetylcholine receptor (nAChR) agonists)

RN 852619-19-3 CAPLUS

CN 1-Azabicyclo[2.2.2]octane, 3-(1H-imidazol-1-yl)- (9CI) (CA INDEX NAME)

REFERENCE COUNT:

THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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(FILE 'HOME' ENTERED AT 07:57:00 ON 29 AUG 2007)

FILE 'REGISTRY' ENTERED AT 07:57:56 ON 29 AUG 2007

| L1 |            | ST | RUC | CTURE  | UPLO  | DADED |         |    |         |     |
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| L2 |            | ST | RUC | CTURE  | UPLO  | DADED |         |    |         |     |
| L3 |            | ST | RUC | CTURE  | UPLO  | DADED |         |    |         |     |
| L4 |            | ST | RUC | CTURE  | UPLO  | DADED |         |    |         |     |
| L5 | 13         | S  | L1  | FULL   |       |       |         |    |         |     |
| L6 | 0          | S  | L2  | FULL   |       |       |         |    |         |     |
| L7 | 0          | S  | L3  | FULL   |       |       |         |    |         |     |
| L8 | 0          | S  | L4  | FULL   |       |       |         |    |         |     |
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| COST IN U.S. DOLLARS                       | SINCE FILE<br>ENTRY | TOTAL<br>SESSION |
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| CA SUBSCRIBER PRICE                        | -1.56               | -1.56            |

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